

Anthracite Dirt Burning Process, Dr. R. E. Rogers, reported progress. (See Minute book.)

There being no other business, after scrutiny of the ballot boxes, by the presiding officer, the following persons were declared duly elected members of this Society :

William H. Greene, M.D., of Philadelphia.

Mr. Arthur Erwin Brown, of Philadelphia, Superintendent of the Zoological Garden.

Carl Seiler, M.D., of Philadelphia.

Dr. Middleton Goldsmith, of Rutland, Vt.

Mr. Richard Wood, of Philadelphia.

And the meeting was adjourned.

Stated Meeting, May 2, 1879.

Present, 13 members.

Vice-President, Mr. FRALEY, in the chair.

Letters accepting membership were received from Dr. Carl Seiler, dated Philadelphia, April 22, 1879; Dr. Wm. H. Greene, dated Philadelphia, 1812 Green St., April 21; Mr. Arthur E. Brown, Zool. Soc., Fairmount Park, April 21, and Dr. M. Goldsmith, dated Rutland, Vt., April 22,

A photograph of Mr. Edward Goodfellow, was received for insertion in the Album.

A letter accepting the appointment to prepare an obituary notice of the late Dr. Isaac Hays was received from Dr. Brinton.

A letter enclosing a communication to be read at the meeting was received from Prof. Daniel Kirkwood, of Bloomington, Monroe Co., Indiana, dated April 19, 1879.

Letters of acknowledgment were received from the Kentucky Historical Society (Proc. No. 102); Buffalo Society of Natural Sciences (102); Kansas State Historical Society

(102); Smithsonian Institution (102); Essex Institute (102); Davenport Academy (102); Providence Franklin Society (102); and the Liverpool Lit. and Philo. Society (Nov. 25, 1878, 100 and 101), and postal cards from many members.

Letters of envoy were received from the Lit. and Philo. Society of Liverpool, and from the Société des Sciences de l'Agriculture de Lille, dated April 1, 1879.

A letter offering an exchange of publications was received from the Director of Studies of the Ecole Polytechnique, dated Paris, April 6, 1879.

Donations for the Library were reported from the Asiatic Society of Japan; the Royal Academy dei L. at Rome; Dr. Prof. F. J. Lauth, of Munich; the Vaudoise Society; Zoologischer Anzeiger; Royal Belgian Academy; Revue Politique; Com. Geog. Society at Bordeaux; R. Astronomical Society; London Nature; Lit. and Phil. Society of Liverpool; Mr. James W. Barclay; Silliman's Journal; Penna. Historical Society; Am. Journal of Pharmacy; Prof. Andrews, of the Geol. Survey of Ohio; and Prof. Joseph LeConte.

A communication was read by the Secretary, entitled, "Meteoric Fireballs seen in the United States during the year ending March 31, 1879, by Prof. Daniel Kirkwood."

Prof. Cope exhibited a life-size drawing of a vertebra of a new species of *Camelosaurus*, for which he proposed the name *C. leptodirus*, and showed in what it differed from the vertebrae of *C. supremus*.

Prof. Marks exhibited a beautiful "Compound Compass," made under his direction by Wm. Young & Sons, for the use of the Geological Survey in drawing tangents and curves of very great radius, or parallels and meridians, and explained how this invention of Peaucellier could be modified for other uses.

Mr. Lesley exhibited a large distemper map of Pennsylvania, painted recently to exhibit to the Legislature the progress of the Survey. Also the first bound copy of Lesquereaux's Coal Flora Atlas of 87 plates, just published by the Board of Commissioners of the Geological Survey.

Prof. Frazer read parts of a correspondence which he had had with Mr. Meehan, respecting the local cause of change of color in autumn foliage.

A letter from Prof. Lauth, of Munich, was read, relating to his recent investigations and proposed publication of a new work on Egyptology.

Pending nominations, Nos. 878 to 882 and new nomination No. 883 were read.

Mr. Fraley, for the Finance Committee, reported that he had collected and paid over to the Treasurer, the quarterly interest on the Michaux Legacy due April 1, amounting to \$133.07.

A discussion on the Wooten process then took place, pending which the meeting was adjourned.

On Meteoric Fireballs seen in the United States during the year ending March 31, 1879. By Professor Daniel Kirkwood.*

(Read before the American Philosophical Society, May 2, 1879.)

The following paper does not claim to present a complete list of the fire-balls which have appeared in our entire country during the last twelve months. It includes, however, all that have been brought to the writer's notice. Of those described only three can be certainly classed as detonating meteors, and in no case has an explosion been followed by a fall of meteoric stones; at least, no aerolites have been actually discovered.

(1.) 1878, June 3, 2h. 59m., A. M.—This meteor, observed at Chicago, by Prof. E. Colbert, was about equal in apparent magnitude to the moon at four days old. Its course was from near the zenith to a point about 4° above Beta Cassiopeie. Near Alpha Cassiopeie it exploded into seven or eight fragments.†

(2.) 1878, June 6th, 9h. 25m. (local time).—On the evening of June 6, Mr. Geo. H. E. Trouvelot, at Cambridge, Mass., saw a very large meteor which passed directly over Omicron Ursæ Majoris, and disappeared just below Eta in the same constellation. It was pear-shaped, the greatest and least diameters being in the ratio of 4 to 3, and it left behind it a long bright train. About three or four seconds after its appearance it burst into five

* No. 6 (January 20, 1877) of the fireballs described in my paper read before the A. P. S., March 16, 1877, was found, after the article was in type, to be a newspaper hoax.

† Letter from Prof. E. Colbert, dated June 3, 1878. See also the Sci. Obs. for July, 1878, p. 3.